of the *Megathyris cistellula,* and that Mr. Barlee has met with several. I have also dredged at the same haul, in the laminarian zone, *live Lucina borealis* and *L. flexuosa,* and examined both.

June 22, 1852.

I have just captured an example of the species known as the *Lepton convexum,* which will solve the problem of its distinctness or otherwise from the *Lepton nitidum,* concerning the animal of which I have full notes. Whilst I write, I examine my prize, which is very vivacious, free from rusticity, and I feel confident will afford to science the information which has been so long a great desideratum. In the same glass I have a live example of the rare *Chemnitzia obliqua* or *C. decorata,* I cannot yet say which (if they are distinct), for fear of disturbing the animal, which is a splendid, unrecorded creature, displaying specific characters of more than usual beauty and interest. I will prepare without delay an account of my captures.—W. C.

V.—*On the Skeleton of the Great Chimpanzee,* Troglodytes gorilla.

By S. Kneeland, Jun., M.D., Boston, U.S.A.

The Boston Society of Natural History has recently received a valuable addition to its cabinet in a nearly complete skeleton of the *Troglodytes gorilla* from Western tropical Africa. It consists of a fine skull, with lower jaw and teeth complete; all the vertebræ except the atlas; the pelvis complete; both scapulæ and clavicles; the humerus, radius, and ulna of left side, the ulna of right side with humerus and radius broken; the right femur, tibia and astragalus, the head and upper part of left femur; all the ribs, except two on the left side; the upper part of the sternum; and a few bones of the hand and foot.

The skull is of great size and strength; the internal capacity is only 27 cubic inches, 8 inches less than in another belonging to the Society. From the great development of the crests, and the massive character of all the bones, this is undoubtedly a male; the jaws, the complete development and worn appearance of the teeth, indicate an adult, if not an old animal. The sutures are hardly discernible, as usual; the superciliary ridges and crests are remarkably developed. The specific characters pointed out by Professor Agassiz, in the decreasing depth of the infra-orbitar canal from before backwards, and the projection outwardly of the inner wall of the orbit, are well seen; there are two infra-orbitar foramina on each side. The nasal bones are united together, in the lower half presenting traces of a median suture, in the upper half a prominent ridge; the portion of the bone between the inner

orbitar angles of the frontals seems to confirm Dr. Wyman's * opinion that it is an independent piece, having its own centre of ossification; the foramen existing midway between the incisive foramen of each side and the edge of the alveolus, on the left side is replaced by two as in the Chimpanzee. The zygomatic arches are exceedingly strong, enclosing temporal muscles of immense size. The other anatomical peculiarities of the cranium and face have been sufficiently detailed by Dr. Wyman (*op. cit.*). The following points are interesting:—the dental formula is the same as in Man; the median upper incisors are twice the size of the lateral, the reverse of which is the case in the lower jaw; they are also respectively longer, giving to the upper incisors a convex edge, and to the lower a concave one: in the upper jaw there is an interval of two or three lines between the incisors and canines, and no interval between the latter and the premolars, the reverse being the case in the lower jaw, in which, however, the interval is less: the upper canines extend from the alveolus $1\frac{1}{2}$ inch, the part within the alveolus being at least 2 inches; they are an inch broad and $\frac{3}{4}$ of an inch thick; the upper canines are worn anteriorly by the lower, and posteriorly by the first lower premolar, giving to the tooth a triangular shape, with an anterior, a posterior, and an internal cutting edge; the action of the lower premolar on the upper canine, and of the latter on the lower canine, produces a distinct talon, or heel, at the base of these teeth: the two grooves mentioned by Dr. Wyman as occurring on the inner face are not seen in these canines, probably from the extent of the worn surface; there is the lower portion of a single groove, however, which is lost in the worn surface beyond: to produce these surfaces there must be some lateral motion of the jaw, which would hardly be expected from the great length of these teeth. The premolars and molars agree with Owen's description in the 'Cyclopædia of Anatomy and Physiology' (Art. Teeth); the first lower premolar is much larger than the second, the anterior cusp being so strongly developed, and the posterior so little, that the tooth resembles an enlarged human canine; all the lower molars have three cusps on the outside and two on the inside. The lower jaw is of great strength, the ramus being at right angles with the body of the bone; the condyle is $1\frac{3}{4}$ inch wide and $\frac{5}{8}$ of an inch thick, projecting much internally: the coronoid process is higher than the condyle. The external face of the ramus is deeply concave for the masseter muscle, which is nearly 3 inches wide; the ramus inclines very much outwardly at its lower portion, and is grooved internally for the internal pterygoid muscle: the body of the jaw is $1\frac{3}{4}$ inch high,

* Boston Journal of Natural History, vol. v. p. 426.

and nearly an inch thick; the height and width at the symphysis is 2 inches, the thickness $1\frac{1}{4}$ inch; the chin is convex and retreating, its convexity measuring $3\frac{1}{4}$ inches. The skull measures from the posterior plane of the occiput to margin of incisors $13\frac{1}{2}$ inches; the diameter of face across zygomata is $6\frac{3}{4}$ inches; from the posterior plane of occiput to fronto-nasal suture $7\frac{1}{2}$ inches; from this suture to margin of incisors $6\frac{1}{2}$ inches; breadth of zygomatic fossa 2 inches; length of bony palate $3\frac{1}{2}$ inches; inter-orbitar space $1\frac{1}{3}$ inch; lateral diameter of orbit $1\frac{3}{5}$, vertical $1\frac{3}{4}$ inch.

Trunk.—Of the vertebræ, only the atlas is wanting. The odontoid process of the axis, instead of being almost perpendicular, as in Man, inclines backwards at an angle of nearly 50°: the spinous process is an inch long, spreading out at its apex to nearly the same width, with an evident disposition to fork as in the human type; it is also somewhat concave at the end of its under surface. The bodies of all the cervical vertebræ are higher, but narrower than in Man, and received deeply one in the other. The spinous processes are horizontal, long, and (excepting the third, which is sharp-pointed) are swelled or club-shaped at the end; the fourth is the longest, the third the shortest; their lengths are, from the posterior face of the spinal canal, as follows:—the third, $2\frac{1}{8}$ inches; the fourth, $3\frac{3}{4}$ inches; the fifth, $3\frac{5}{8}$ inches; the sixth, $3\frac{1}{8}$ inches; the seventh, $3\frac{1}{4}$ inches: the use of these long processes is sufficiently obvious, being required for the ligamentum nuchæ necessary for the support of the ill-balanced head. The transverse processes are very long, the posterior an inch in length; the anterior or cervical ribs begin to be seen at the fourth, increasing to the sixth and seventh, which last are of equal size—there being, as a general rule, no cervical ribs to the seventh vertebra of the mammal neck. All are pierced for the vertebral artery on each side; the transverse processes are directed obliquely downwards.

The *dorsal* vertebræ are fourteen in number, as in the Chimpanzee (according to Cuvier; Vrolik gives this last only thirteen). They much resemble the human in shape and size; the last two are rather larger, and more like human lumbar vertebræ; the spinous and transverse processes are much more developed. The spinous process of the first is like the cervical, and $2\frac{7}{8}$ inches long; the spinal canal is less in this and the remainder of the column; the spinous processes of the second and third are compressed laterally at the end, and $2\frac{1}{2}$ inches long. At the fourth the spinous processes begin to descend, as in Man, to the ninth; below this they resemble the lumbar spines, though pointing more downwards. The last dorsal has its rib on the right side firmly anchylosed to the body.

The *lumbar* vertebræ are only *three* in number,—less than in any of the higher mammals; but taking in the dorsals, there is in both the same number as in Man. The bodies are larger and thicker than in Man; the vertical diameter is less anteriorly than posteriorly, making an anterior concavity, and showing that the erect position is as unnatural for this as for the other Quadrumana.

The *sacrum*, which has a slight lateral deviation to the left, consists of eight bones, firmly joined together, the intervertebral spaces being obliterated except between the first and second. The first bone resembles very much a lumbar vertebra, and on one side its transverse process, though bearing the upper portion of the articulating surface for the right ilium, is not connected with the lateral portion of the sacral wing below; on the left side the bony union is complete, and the spinous process is continuous without interruption or foramen with the median sacral crest; this crest at its upper portion is 2 inches high, gradually decreasing, and lost entirely on the sixth bone, where also the sacral canal terminates. The sacrum is long and narrow, having a very decided concavity anteriorly. The articulating surface for the ilium is confined to the first three vertebræ. Whether any coccygeal vertebræ are anchylosed in the sacrum it is not easy to say; from the uncommonly large number of sacral vertebræ, viz. eight, it would seem probable that these also include the coccyx; the terminal bone ends in a rounded projection, which has somewhat the appearance of an articulating surface. In Dr. W. Lewis's description of a Gibbon (Boston Journal, vol. i. p. 35) it is stated that the coccyx consisted of a single bone; in our specimen this single rudimentary coccyx may have been attached to the sacral terminal surface.

The bodies of the second and third cervical vertebræ incline backwards; the direction becomes perpendicular in the fourth, and in the last three a little inclined forwards: at the upper dorsal region the spine is slightly convex, in the lower dorsals and lumbar concave; at the last lumbar and first sacral it is again convex, and in the lowest portion again concave. The whole number of vertebræ is 32, and possibly 33; the length of the cervical, dorsal and lumbar regions is 22 inches: from this it would appear that the spinal column is very nearly as long as the human, which it also comes nearer to in its curves than any of the Quadrumana.

The *pelvis* departs widely from that of the Chimpanzee and Orang, and approaches that of Man in the greater spread of the ilium, its deep anterior concavity, and corresponding posterior convexity, on which a well-marked longitudinal ridge indicates the origin of the glutæus maximus; and a fainter semicircular

line, extending from the sciatic notch to near the rudimentary anterior inferior spinous process, about $2\frac{1}{2}$ inches above the acetabulum, the probable origin of the glutæus minimus; the anterior superior spinous processes are fully 6 inches in advance of the plane of the sacrum. The sacrum extends only to the spine of the ischium, about 4 inches from the tuberosities of this bone, so that the pelvis has somewhat of the lengthened narrow form peculiar to the Quadrumana, though it projects far more from the line of the spine than in any other members of the group. The superior aperture has not the narrow elongated shape of the Orang's, the antero-posterior diameter being only half an inch greater than the transverse, these being respectively $6\frac{1}{2}$ and 6 inches; in the female, according to Dr. Wyman's measurements, the difference is 3 inches. The tuberosities of the ischia are very thick and broad, and the rami of the pubes very wide; the whole lower portion indicates great strength and solidity. It is the portion of the pelvis between the acetabulum and the lower edge of the sacro-iliac articulation which is so much shorter than in the Chimpanzee, and which gives to the pelvis its more human aspect. The length of the sacrum is $6\frac{1}{2}$ inches, the width 4; breadth of pelvis between spinous processes of ilia $16\frac{1}{2}$ inches; breadth of ilium 9; length of os innominatum $14\frac{1}{2}$ inches; from outside of one tuber ischii to the other 7·15 inches.

At first sight the *scapula* has much the appearance of the human, having very much its shape, but somewhat enlarged; it more nearly resembles that of the Orang than that of the Chimpanzee, but is more like that of Man than either in its more equilateral form. The spine is nearly in the middle of the bone, making the supraspinous nearly equal to the infraspinous fossa; after about one-third of its length it ceases to have the broad thick edge of the human spine, reaching nearly to the posterior border, but is continued by a sharp well-marked ridge quite to the edge, as in the Orang; the spine is also more perpendicular to the plane of the dorsum than in Man, and its direction more that of the axis of the trunk. The acromial process is longer and less curved than in Man, and wants the strong angle on its posterior surface, a little in advance of the plane of the glenoid cavity; its arch over this cavity belongs also to a much larger circle. The coracoid process has a greater inclination downwards than in Man and the Chimpanzee; this direction, in the Orang, Vrolik considers a sign of inferiority. The glenoid cavity is much the same as in Man, the upper half being less narrow in proportion. The subscapular fossa is very deep, and divided by prominent ridges into five or six smaller depressions. There is no deep suprascapular notch as in the human scapula; but there is a decided concavity at the base of the coracoid pro-

cess, without the narrowness of a notch, contrasting strongly with the nearly straight line of the upper border of the bone in the Orang. Length of scapula along the base 10 inches; broadest part $7\frac{1}{4}$ inches.

The *clavicles* are shorter and stronger than in Man, and less curved; the edges are more angular; their length in a straight line is $6\frac{1}{4}$ inches; their circumference in the middle 2 inches, thence increasing to each end. The subclavian ridge is well marked.

The *sternum*, at its upper portion, is 4 inches wide, and about half an inch thick; there is a decided semilunar notch, but less than in Man; the lower portions are wanting. There is no sign of division into lateral halves in this upper portion, which is $3\frac{3}{4}$ inches long. The articular surface for the clavicles is less curved and more horizontal than in Man.

The *ribs* are fourteen pairs; of these two are wanting on the left side, at about the middle of the series. They much resemble those of Man, and form a very capacious thorax; they are, however, longer and thicker, and the curves less complicated. Some of them bear marks of old injuries. The angles are very well marked; the last rib is united both to the body and to the transverse process of a single vertebra.

The *humerus* is 3 inches longer than that of Man, and 2 inches greater in circumference at the middle, the latter measurement being 5 inches; the length is $16\frac{1}{2}$ inches; around the middle of the head, horizontally, $8\frac{1}{4}$ inches; greatest width at lower extremity $4\frac{1}{4}$ inches. The bone is of very compact structure and very heavy. It resembles that of Man, but is less twisted on itself; the bicipital groove is deep and wide, having on its sides very large tuberosities for muscular insertions; the ridges for the pectoralis major and latissimus dorsi are well marked, as is also the insertion of the deltoid; the anterior face is rather convex than concave, even more so than in Man. Both the condyles and the condyloid ridges are more developed than in Man; the trochlear portion is less excavated, and the internal ridge less prominent; there is a deep groove between the trochlea and the surface for the head of the radius, which is very slight in Man. The lower extremity is perforated on the right side, but not on the left: the cavity for the olecranon is an inch in width and half an inch deep, while that for the coronoid process, on the anterior surface, is hardly sunk beneath the level of the bone: this difference is much less in Man.

The *ulna* is more curved than the human, as is also the *radius*; they curve in opposite directions, enclosing a wide space between them; the curve of the radius begins at the tubercle, while the ulna is curved its whole length. The length of the ulna is

14·3 inches, that of the radius 13½ inches. The articulating surface for the humerus, on account of the less prominence of the inner ridge of the trochlea, differs from that of Man in being proportionally wider, and in having a deep concave inner wall, which in the human ulna is not only wanting, but the edge of this border of the joint is worn into a deep notch corresponding with the long inner ridge of the human trochlea; at the bottom of this cavity is an irregular long bone, apparently wedged in, and perhaps having a separate centre of ossification; if the olecranon process were taken off through the suture here left open, the head of the ulna would very much resemble the head of the tibia, to which it corresponds in the lower extremity—this is seen on both sides. The articulating surface for the head of the radius is less perpendicular than in Man; the coronoid process is also less prominent, in conformity with the small anterior concavity on the humerus: the styloid process and the accompanying groove occupy a greater proportion of the lower extremity. With the exception of stronger ridges and sharper angles, the remaining portions of the ulna and radius resemble much the same bones in Man on a larger scale. The proportion between the humerus and ulna brings this animal nearer to Man than the Chimpanzee or Orang.

The *femur* in its head and neck is much like the human; it has a roughness, hardly a depression, for the ligamentum teres; the neck of the bone is proportionally shorter, and placed more obliquely with respect to the shaft; the trochanters, especially the great, are much stronger; the space between the great trochanter and the head of the bone is less, and the concavity deeper than in Man; the neck is also more flattened; the whole bone is flatter, especially just above the condyles, and its shaft more curved. Though the inner condyle is so much longer than the external as to give the lower part of the shaft an inclination outwards, as in Man, the curve of the middle and upper portions restores its general direction nearly to the vertical, as in the Chimpanzee. The femur is about 2 inches shorter than the humerus; in this respect the *T. gorilla* recedes from the human type, while he approaches it in the relative lengths of the ulna and humerus.

The *tibia* is considerably shorter than the human (11½ inches long), and more curved both laterally and anteriorly, enclosing consequently with the fibula a large interosseous space. The right *astragalus* is preserved, resembling the human, but flatter and longer; the articular surface for the tibia is less convex and narrower posteriorly; the surface for the scaphoid is more prominent, flatter, and with a better marked constricted neck; the lateral surface for the tibia is less vertical and more quadrilateral;

the surface for the fibula is less triangular; the posterior portion is wider, with a less deep groove for the flexor longus pollicis; the surfaces for the os calcis with the deep groove are much as in Man.

There are also a few carpal, metacarpal, and phalangeal bones of the fingers and toes; the metacarpal bones are long and curved inwards, with large lower articulating surfaces; the bones of the fingers have their edges much turned under on the anterior surface, for the protection of the vessels, &c. in the act of climbing.

The height of this specimen must have been nearly $5\frac{1}{2}$ feet, and the breadth of the shoulders, judging from the scapulæ and ribs, 2 feet at least, and probably more. The hands extend a little below the knees; the abdomen, judging from the iliac fossæ, must be nearly 2 feet wide; the lower extremities much bowed.

Boston, May 11, 1852.

VI.—*On some genera of the* Icacinaceæ. By John Miers, Esq., F.R.S., F.L.S.

[Continued from vol. ix. p. 492.]

Stemonurus.

There can exist no doubt that the genus *Stemonurus*, proposed by Professor Blume in his 'Bijdragen' in 1826, is the same as the *Gomphandra* of Dr. Wallich, although they have hitherto been considered as distinct; but at the same time there is every reason to conclude, that both are again identical with the *Lasianthera* of Pal. de Beauvois, established as far antecedently as 1805, in his 'Flora Owariensis,' and placed by DeCandolle in his 'Prodromus' (i. p. 636) as a doubtful genus of the *Ampelidæ*: in such case, the latter name, on account of its priority, ought to claim the preference. As however it is contrary to the rules of science to form a compound generic term from both Greek and Latin roots, the name would necessarily require to be modified into *Lasiandra*, one that has long been preoccupied. Besides this, we have to consider the confusion likely to arise from increasing a list of consimilar names, already too numerous, as *Lasiandra*, *Lasianthæa*, *Lasiantha*, *Lasianthus*, and *Lasianthera*, and also, that in reality the latter name is untenable, because of the incorrectness of its signification, for in the present case it will be seen, that it is not the anther, but the filament which is villous. For all these reasons, I strongly recommend the preference to be given to *Stemonurus*, the next in priority, as the most appropriate designation of this genus.